WE CLAIM:

1. A method of forming an integrated circuit structure comprising:

forming a gate oxide layer over a semiconductor substrate;

forming a titanium boronitride barrier layer above at least a portion of the gate oxide layer;

forming a polysilicon layer above at least a portion of the titanium boronitride barrier layer; and

forming a conductive layer above at least a portion of the polysilicon layer, wherein the act of forming the conductive layer incorporates fluorine atoms or ions into the conductive layer, and wherein the titanium boronitride barrier layer inhibits diffusion of the fluorine atoms or ions from the conductive layer into the gate oxide layer.

2. The method of Claim 1 wherein the act of forming a titanium boronitride layer comprises:

forming a TiN layer; and

incorporating boron into the TiN layer.

3. The method of Claim 2 wherein the TiN layer is formed by reactively sputtering a titanium target in a nitrogen-containing ambient.

4. The method of Claim 3 wherein the act of sputtering occurs at a radio frequency energy of between about 1kW and about 2 kW.

5. The method of Claim 3 wherein the nitrogen-containing ambient comprises an inert gas and nitrogen ions from a nitrogen source gas.

6. The method of Claim 5 wherein the nitrogen source gas is selected from the group consisting of nitrogen and ammonia.

7. The method of Claim 5 wherein the concentration of the nitrogen source gas is about 5% to about 30%.

8. The method of Claim 5 wherein the nitrogen source gas is introduced into a sputtering chamber at a rate of between about 1 sccm and about 15 sccm.

9. The method of Claim 2 wherein the TiN layer is formed using a TDMAT process.

10. The method of Claim 9 wherein the act of forming using the TDMAT process occurs at a temperature of between about 300°C and about 500°C.

11. The method of Claim 9 wherein the act of forming using the TDMAT process occurs at a pressure of between about 0.01 Torr and about 2.0 Torr.

12. The method of Claim 2 wherein the act of incorporating boron into the TiN layer comprises introducing a boron-containing gas into a chemical vapor deposition (CVD) chamber.

13. The method of Claim 12 wherein the boron-containing gas comprises diborane.

14. The method of Claim 12 wherein the boron-containing gas comprises silane at a concentration in the range of about 1% to about 50%.

15. The method of Claim 12 wherein the boron-containing gas is introduced into the CVD chamber at a rate of between about 5 sccm and about 500 sccm.

16. The method of Claim 12 wherein act of incorporating boron into the TiN layer occurs at a pressure of between about 0.5 Torr and about 100 Torr.

17. The method of Claim 12 wherein act of incorporating boron into the TiN layer occurs at a temperature of between about 300°C and about 700°C.

18. The method of Claim 1 further comprising annealing the integrated circuit structure.

19. A method of forming a gate in an integrated circuit comprising:

forming a dielectric layer;

forming a polysilicon layer over at least a portion of the dielectric layer;

forming a diffusion barrier layer comprising titanium boronitride over at least a portion of the polysilicon layer; and

forming a conductive layer over at least a portion of the diffusion barrier layer, wherein the conductive layer has at least some fluorine atoms or ions therein, and wherein the diffusion barrier layer inhibits diffusion of the fluorine atoms or ions from the conductive layer into the polysilicon layer.

20. The method of Claim 19 wherein the titanium boronitride is formed using a chemical vapor deposition (CVD) process.

21. The method of Claim 20 wherein the CVD process includes a titanium-containing source gas, a nitrogen-containing source gas, and a boron-containing source gas.

22. The method of Claim 21 wherein the titanium-containing source gas is selected from the group consisting of titanium tetrachloride and titanium tetraiodide.

23. The method of Claim 21 wherein the nitrogen-containing source gas comprises ammonia.

24. The method of Claim 21 wherein the boron-containing source gas comprises diborane.

25. The method of Claim 20 wherein the CVD process occurs at a pressure of between about 0.5 Torr and about 100 Torr.

26. The method of Claim 20 wherein the CVD process occurs at a temperature of between about 500°C and about 700°C.

27. The method of Claim 19 wherein the act of forming titanium boronitride comprises combining tetrakisdimethyl-aminotitanium with a boron-containing source gas.

28. The method of Claim 27 wherein the act of combining occurs at about 0.5 Torr to 100 about Torr.

29. The method of 27 wherein the act of combining occurs at about 300°C to about 600°C.

30. The method of Claim 27 wherein the boron-containing source gas comprises diborane.

31. The method of Claim 19 further comprising annealing the gate.

32. The method of Claim 19 wherein the diffusion barrier layer inhibits diffusion of the fluorine atoms or ions from the conductive layer into the dielectric layer.

33. A method of forming a gate electrode comprising:

forming a dielectric layer on a semiconductor substrate;

forming a diffusion barrier layer comprising titanium boronitride over at least a portion of the dielectric layer;

forming a polysilicon layer over at least a portion of the diffusion barrier layer;

forming a conductive layer over at least a portion of the polysilicon layer, wherein the act of forming the conductive layer incorporates fluorine atoms or ions into the conductive layer; and

annealing the conductive layer, wherein the diffusion barrier layer inhibits fluorine diffusion from the conductive layer into the dielectric layer.

34. The method of Claim 33 wherein the titanium boronitride has a thickness of about 50 angstroms to about 500 angstroms.

35. The method of Claim 33 wherein the act of forming the conductive layer forms tungsten.

36. The method of Claim 33 wherein the act of forming the conductive layer forms tungsten silicide.

37. The method of Claim 33 wherein the act of forming the conductive layer comprises combining tungsten hexafluoride and silicon tetrahydride.

38. The method of Claim 37 wherein the act of combining comprises a chemical vapor deposition (CVD) process.

39. The method of Claim 33 wherein the act of forming the conductive layer comprises combining a metal source and a silicon source gas in a chemical vapor deposition (CVD) process.

40. The method of Claim 39 wherein the metal source is selected from the group consisting of titanium tetrachloride and tungsten hexafluoride.

41. The method of Claim 39 wherein the silicon source gas is selected from the group consisting of silane, disaline, trisaline, and di-chlorosilane.

42. The method of Claim 33 wherein the conductive layer has a thickness of about 200 angstroms to about 4,000 angstroms.

43. The method of Claim 33 wherein the dielectric layer has a thickness of about 30 angstroms to about 200 angstroms.

44. The method of Claim 33 wherein the act of forming the dielectric layer comprises growing a gate oxide layer through a mask.

45. The method of Claim 33 wherein the act of forming the dielectric layer comprises forming a gate oxide layer through trench isolation.

46. The method of Claim 33 wherein the polysilicon layer has a thickness of about 300 angstroms to about 1,500 angstroms.

47. The method of Claim 33 wherein the act of forming the polysilicon layer comprises a chemical vapor deposition (CVD) process.

48. The method of Claim 33 wherein the act of annealing occurs at a temperature of between about 600°C and about 900°C.

49. The method of Claim 33 wherein the act of annealing occurs for about 25 minutes.